Wireless Temperature/Humidity Station

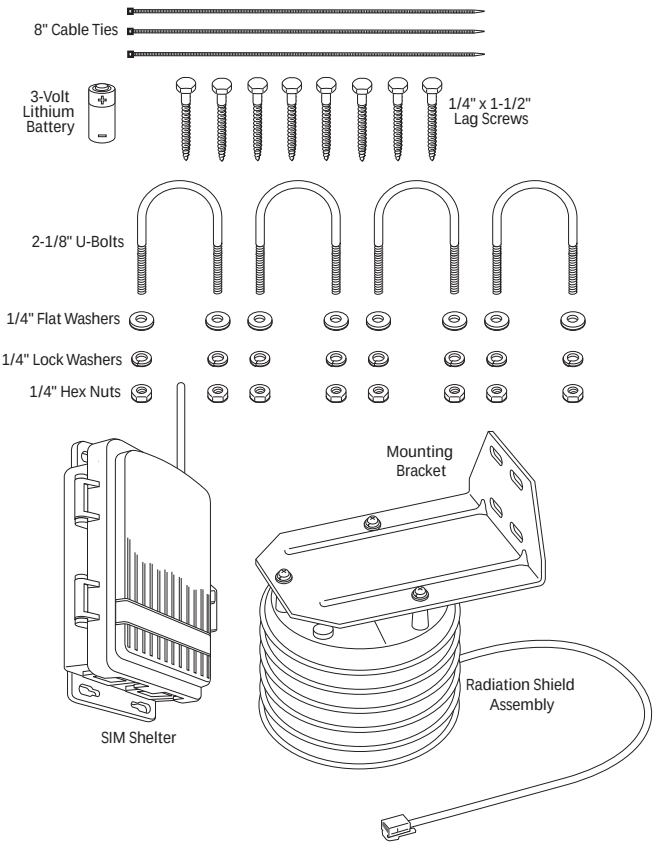
Installation Manual

For Vantage Pro2™ and Vantage Pro2 Plus™

The Wireless Temperature/Humidity Station, referred to as the Temp/Hum Station in this manual, is for use with Wireless Vantage Pro2 weather stations. It is not compatible with original Vantage Pro wireless weather stations. Owners of original Vantage Pro Weather stations should use Davis product number 6380 or 6380OV.

Components

The Temp/Hum Station consists of a temperature and humidity sensor located in a radiation shield, plus a sensor interface module and transmitter located in a separate protective housing.



Tools for Setup

In addition to the hardware provided, you will need some or all of the following materials:

- Small phillips head screwdriver
- Adjustable wrench or 7/16" wrench
- Ballpoint pen or paper clip (small pointed object of some kind)
- Drill and 3/16" (5 mm) drill bit (if mounting on a flat, vertical surface)

Installation Steps

For ease of installation, please follow the steps in the order presented.

- Preparing the Temp/Hum Station, page 2
  - Rotating the Mounting Bracket, page 2
  - Applying Power, page 4
- Setting the Transmitter ID, page 4
  - Setting Console Station ID on the Console, page 5
  - Setting the Console Station ID using WeatherLink, page 5
  - Viewing Current Temperature and Humidity, page 5
  - No Communication with Temp/Hum Station, page 6
- Choosing a Location for the Temp/Hum Station, page 7
- Testing Transmission from Proposed Location, page 7
- Mounting the Temp/Hum Station, page 7
- A Note on Securing Cables, page 10

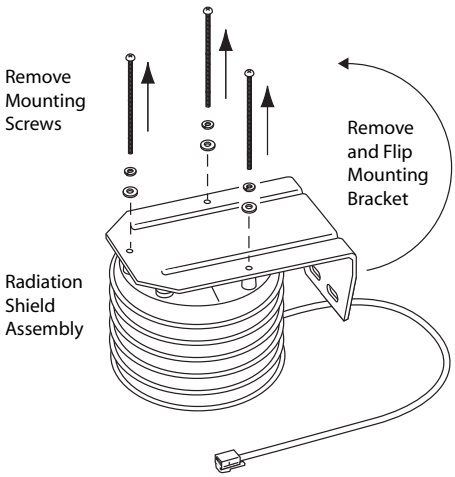
For maintenance information, see “Maintenance” on page 10. For Technical Support, see “Contacting Davis Instruments” on page 10. Product specifications are located on page 11.

Preparing the Temp/Hum Station

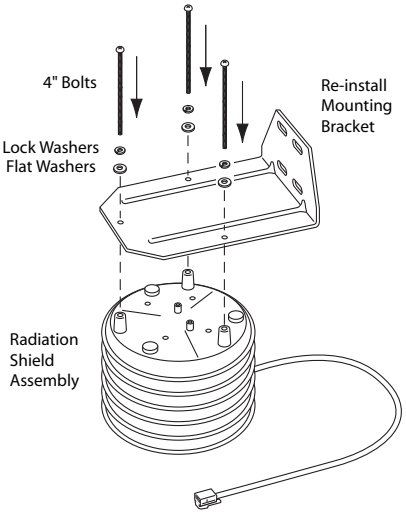
Rotating the Mounting Bracket.

To facilitate packing and shipping the Temp/Hum Station, the mounting bracket is installed upside down at the factory. You will need to rotate the mounting bracket 180° before you install the station

1. Place the Temp/Hum Station on a level surface.
2. Loosen the three mounting screws that hold the mounting bracket and the radiation shield together as shown in the illustration right.

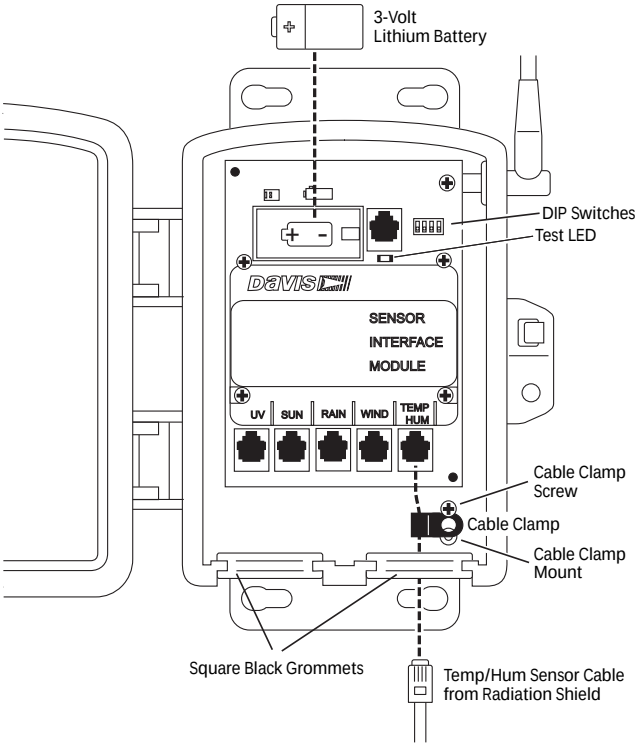


3. When the screws are completely loosened, lift the mounting bracket away from the radiation shield.
4. Rotate the mounting bracket and replace it on the radiation shield.
5. Fasten the mounting bracket in place using the three long screws as shown in the illustration right.



Applying Power

1. Locate the SIM Shelter and open it by pushing the latch away from the Shelter body while pulling up on the tab with your index finger. Once open, you should be able to see the sensor interface module (SIM).



SIM Shelter open. Note positions of battery, DIP switches and Cable Clamp

2. Plug the Temp/Hum Sensor Cable into the jack labeled TEMP/HUM on the bottom right hand corner of the SIM board. Take care to carefully dress the cable through the black rubber grommet on the bottom right hand side of the shelter. Also, dress the cable through the cable clamp by first removing the screw connecting it to the shelter, dressing the cable through the round part of the clamp, and then driving the screw back through the holes in the clamp and into the cable clamp mount.
3. Insert the 3-volt lithium battery into the battery holder, matching the "+" sign on the battery with the "+" sign on the battery holder.
4. Consult this drawing to locate the DIP switches. You will work with them when you set the transmitter ID.

Setting the Transmitter ID

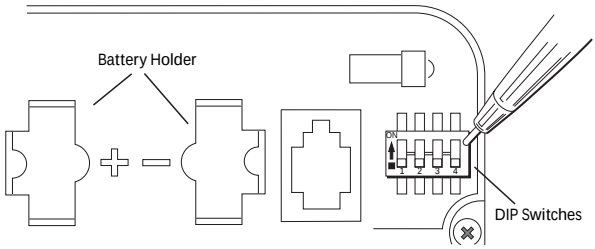
Your Temp/Hum Station must be set to one of eight transmitter IDs. You set the transmitter ID using DIP switches #1, 2 and 3, located on the SIM near the battery holder. The transmitter and receiver communicate with each other only when both are set to the same ID.

Note: DIP switch #4 is used to set the station to TEST Mode for transmission testing and does not affect the ID.

The factory default transmitter ID setting is '1'. Looking at the table on the next page, you can see that means the DIP switches are in the OFF position.
Since the ISS is included with every Wireless Vantage Pro, the console is set at the factory to find the ISS on '1'. **Set your Temp/Hum Station to a different transmitter ID number.**
Use a ballpoint pen or paper clip to toggle DIP switches #1, 2, and 3. The settings for transmitter IDs 1 – 8 are shown in the following table:

ID CODE	SWITCH 1	SWITCH 2	SWITCH 3
#1 (default)	off	off	off
#2	off	off	ON
#3	off	ON	off
#4	off	ON	ON
#5	ON	off	off
#6	ON	off	ON
#7	ON	ON	off
#8	ON	ON	ON

Use this table to ensure that each wireless transmitting station in your system is broadcasting on its own transmitter ID.



DIP Switches in Top-right Corner of SIM (Illustration has been enlarged for clarity)

Setting Console Station ID on the Console

1. Put your console into Setup Mode — press and hold DONE and press the DOWN arrow (-).

The console will show you Screen 1: Transmitters. You should see the words: "RECEIVING FROM..." and "STATION NO." followed by the transmitter IDs that your console detects. One of these should be the ID number you just set on the Temp/Hum Station transmitter. If you don't see it, make sure the console is within 10' of the transmitter, and verify that you set the DIP switches correctly. If you still don't see it, set your Temp/Hum Station into TEST Mode by following the instructions on page 7.

2. Press DONE to move on to Screen 2: Selecting Transmitters.

Setup Mode – Screen 2 is where you will set the console to recognize signals on that ID as coming from a Temp/Hum Station.

3. Press the LEFT (<) or RIGHT (>) arrows to scroll through transmitter IDs.

When you see the ID you chose for the Temp/Hum Station, use the UP or DOWN arrow keys to activate reception of that ID code. Make sure the screen shows "ON".

4. Press GRAPH to change the type of station assigned to that transmitter ID.

Press GRAPH until "TEMP HUM" appears.

5. To exit Setup Mode, press and hold DONE.

Setting the Console Station ID using WeatherLink

You can also set the console ID for your Temp/Hum Station from WeatherLink version 5.2 or later.

- In WeatherLink 5.2 and later set the station type to TEMP/HUM.

Viewing Current Temperature and Humidity

1. On the console, press TEMP until you see an 'outside' temperature displayed on the console screen with the correct Station No. displayed above or below it.
2. Press HUM until you see an 'outside' humidity displayed on the console screen with the correct Station No. displayed above or below it.

This confirms communication between your Temp/Hum Station and the console. If you are not receiving the sensor readings on the console go the the next section, "No Communication with Temp/Hum Station".

3. Close the SIM Shelter cover. See page 4.
4. Go on to "Choosing a Location for the Temp/Hum Station" on page 7.

No Communication with Temp/Hum Station

1. First, verify that the console is powered and is not in Setup Mode. Exit Setup Mode by pressing DONE and holding it for a moment.
2. On the Temp/Hum Station, check that the battery is properly installed.
3. Walk around the room with the console, standing for a few moments in various locations to see if you are picking up signals. It may take up to three minutes to acquire a signal, see your Vantage Pro2 Console manual for details on transmission.
4. If you don't see readings no matter where you stand with the console, put the transmitter on your Temp/Hum Station in TEST mode.

TEST mode

DIP switch #4 on the SIM (see illustration on page 4) is the TEST DIP-switch. Switch it to the ON position using a ball-point pen or paper clip. This puts the transmitter in *Test Mode.* An LED indicator light will flash each time the station transmits:

- The LED will flash each time the transmitter broadcasts a signal, which should be every 2.5 seconds.

If the LED does not flash, there may be a problem with the transmitter. See "Contacting Davis Instruments" on Page 10.

If the LED flashes repeatedly but your console isn't picking up a signal anywhere in the room, it could be related to one of the following causes:

1. The DIP switches were not correctly set on the Temp/Hum Station.
   Review "Setting the Transmitter ID" on page 4.
2. The ID was not correctly set on the console.
   Review "Setting the Console Station ID on the Console" on page 5.
3. Reception is being disrupted by RF (radio frequency) interference.
4. There is a problem with the console or Temp/Hum station.
   See "Contacting Davis Instruments" on page 10.

Note: Remember to **set the Test DIP switch OFF** when you're finished testing wireless transmission. If it is left ON, the blinking LED will reduce battery life significantly.

Choosing a Location for the Temp/Hum Station

Consider the following factors as you choose a location:

- Do not mount the station near any source of cold or heat that might distort temperature measurements.
- The station's radiation shield works best in a location with a steady breeze. Mount it away from fences, buildings, trees, or other obstructions.
- Mount the station over vegetation or soil if possible.
- Do not install over or near sprinklers. The radiation shield is not designed to protect sensors from water that is sprayed upwards.
- If mounting on a building, the preferred location is on the north side in the Northern Hemisphere and on the south side in the Southern Hemisphere. Mount it on the side that receives the least sunlight throughout the day.

Testing Transmission from Proposed Location

It is very important to test reception from the proposed location before permanently mounting the Temp/Hum Station.

- Place the Temp/Hum Station at the intended mounting site, or have someone hold it there, so you can walk around with the console for a few minutes.

Note: Rotating the antenna on the station and on the console may help improve reception. Generally, for best reception the two antennas should be oriented parallel to each other.

- Test wireless reception anywhere you might want to use or mount your console now or in the future. Take your time.
- If you aren't picking up strong signals where you intend to place your console, better to move the Temp/Hum Station now than after it has been mounted. Experiment.

Mounting the Temp/Hum Station

The Temp/Hum Station can be mounted on a pole or on a vertical surface such as a wooden post or wall. Remember that enough space must be available to mount both the Radiation Shield and the SIM Shelter in the same general location. It is recommended that the SIM Shelter be mounted below the Radiation Shield, ideally perpendicular to it.

Mounting on a Pole

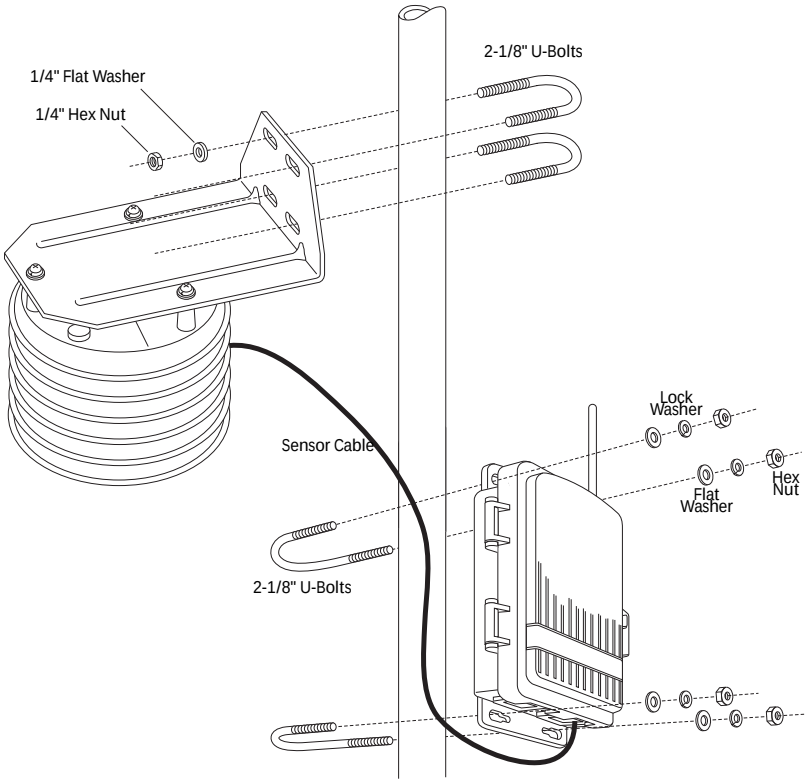
Use a pole having an outside diameter between 1" and 1-1/4" (25 – 31 mm).

1. Hold the mounting bracket against the pole. Put two U-bolts around the pole and insert the ends through the holes in the back of the mounting bracket.
2. Secure the mounting bracket using 1/4" flat washers and 1/4" hex nuts.

Tighten all four sets of washers and hex nuts until the mounting bracket is firmly mounted on the pole.

3. Next, install the SIM Shelter. While holding the shelter against the pole, place a U-bolt around the pole and through the two holes on at the top of the shelter.
4. Place a flat washer, a lock washer and a hex nut on each of the bolt ends.
5. Using an adjustable wrench or 7/16" wrench, tighten the nuts.
6. Place the second U-bolt around the pole and through the two holes at the bottom of the shelter.
7. Put a flat washer, a lock washer, and a hex nut on each bolt end, and tighten the hex nuts.
8. Use 8”Cable Ties to secure sensor cable to pole to prevent fraying in wind.

Note: Review the illustration below to see how the Temp/Hum Station is mounted on a pole.



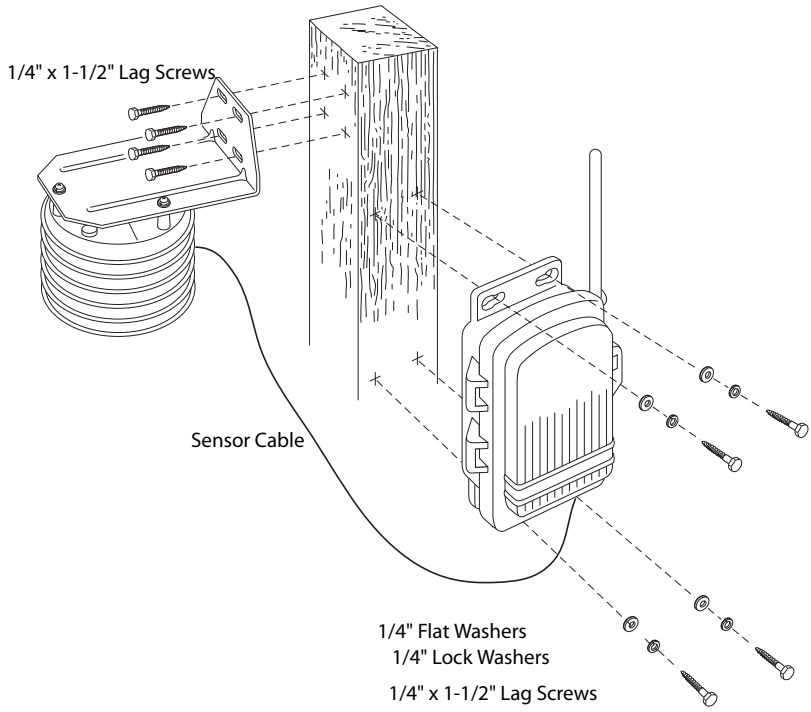
Mounting on a Pole

Mounting on a Vertical Surface

1. Using four 1/4" x 1-1/2" lag screws, attach the mounting bracket to the surface in the desired location.
   Drill holes using a 3/16" (5 mm) drill bit. Use a carpenter’s level when marking the holes, to ensure that the bracket will be level.

2. Next, install the SIM Shelter. With a 3/16" (5 mm) drill bit, drill two holes approximately 2" (50 mm) apart. Use a carpenter's level to ensure the holes will be level.
3. Drill two more holes 7-1/32" below the upper holes.
4. Insert the 1/4" x 1-1/2" lag screws through the flat washers, and through the holes at the top of the shelter into the post.
   Using an adjustable wrench or 7/16" wrench, tighten the lag screws.
5. Insert the 1/4" x 1-1/2" lag screws through the flat washers, and through the holes at the bottom of the shelter into the post.
6. Using an adjustable wrench or 7/16" wrench, tighten the lag screws.

Note: Review the illustration below to see how the Temp/Hum Station is mounted on a vertical surface.



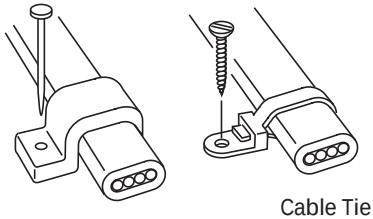
Mounting on a Vertical Surface

Maintenance

- The ability of the radiation shield to keep fresh air flowing over the sensors will be reduced if the shield plates become dirty. Clean the surfaces of the shield plates periodically with a damp cloth.
- Keep areas between the shield plates free of debris that may obstruct air flow. Examples are leaves, twigs, webs, nests.
- DO NOT remove nesting insects or animals by spraying insect killer of any kind into the radiation shield. Chemicals could easily damage the circuitry inside your temperature/humidity station.
- If necessary, it is possible to disassemble the Radiation shield. To do this, unscrew the three machine screws attaching the Mounting Bracket to the Radiation Shield. When removing the last screw, place your hand below the Radiation Shield to keep it from falling. Once the screws are removed, the individual plates that make up the Radiation Shield can be separated and the sensor is exposed.

A Note on Securing Cables

To prevent fraying or cutting of cables, secure them so they will not whip about in the wind. Secure a cable to a metal pole by wrapping electrical tape around it or using the supplied cable ties. Make sure cables are secure by placing clips or ties approximately every 3 – 5' (1 – 1.6 m).



Note: Do not use metal staples or a staple gun to secure cables. Metal staples—especially when installed with a staple gun—have a tendency to cut the cables.

Contacting Davis Instructions

If you have questions about your Temp/Hum station, or encounter problems installing or operating the station, please contact Davis Technical Support.

Note: Please do not return items to the factory for repair without prior authorization.

(510) 732-7814 for Technical Support, Monday – Friday, 7:00 a.m. – 5:30 p.m. Pacific Time.

(510) 670-0589 Fax to Customer Service or Tech Support.

support@davisnet.com E-mail to Technical Support.

info@davisnet.com General e-mail.

www.davisnet.com Copies of User Manuals are available on the "Support" page. Watch for FAQs and other updates. Subscribe to the e-newsletter.

Specifications

General

Operating Temperature	-40° to +150° F (-40° to +65° C)
Non-operating Temperature	-50° to +158° F (-45° to +70° C)
Current Draw, Sensors & Transmitter only	0.14 mA (average), 30 mA (peak) at 3 VDC
Battery: Sensors & Transmitter	CR-123 3-Volt Lithium cell
Battery Life	8 months
Sensor Type	
Temperature	Thermistor
Relative Humidity	Film capacitor element
Housing Material	UV-resistant PVC plastic
Dimensions	8.25" wide x 7.25" long x 7.75" high (210 mm x 184 mm x 197 mm)
Weight	3.5 lbs. (.1.6 kg)

Wireless Communications

Transmit/Receive Frequency	US Models: 902-928 MHz FHSS, Overseas Models: 868.0 - 868.6 MHz FHSS.
ID Codes Available	8
Output Power	902-928 MHz FHSS: FCC-certified low power, less than 8 mW, no license required 868.0 - 868.6 MHz FHSS. CE-certified, less than 8 mW, no license required
Range	
Line of Sight	up to 1000 feet (300 m)
Through Walls	200 to 400 feet (75 to 150 m)

Sensor Output (as used by Davis Instruments weather station consoles.)

Temperature (Air)	
Resolution and Units	1°F or 1°C (user-selectable)
Range	-40° to +150° F (-40° to +65° C)
Sensor Accuracy	±1°F (±0.5°C) under 110°F (43°C), ±2°F (±1°C) over 110°F (43°C) (see chart)
Radiation Induced Error	+2°F (1°C) at solar noon (insolation = 1040 W/m2, avg. wind speed 2 mph (1 m/s))
Update Interval	10 seconds
Data	Instant Reading (user adjustable)
Alarms	High and Low Thresholds from Instant Reading
Relative Humidity	
Range	1 to 100% RH
Accuracy	±3% (0 to 90% RH), ±4% (90 to 100% RH)
Drift	up to ±2% per year
Update Interval	every 50 seconds
Data	Instant (user adjustable)
Alarms	High and Low Threshold from Instant Reading

Product Numbers: 6382, 6382OV

Davis Instruments Part Number: 07395.242

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Rev. B Manual, 12/28/09

This product complies with the essential protection requirements of the EC EMC Directve 2004/108/EC.

Davis Instruments

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